

REMARKS

Claims 22-42 remain in the application. Claim 32 has been amended.

Applicant thanks the Examiner for the allowance of claims 22 and 25-31.

Claims 32-42 remain rejected as being anticipated by *Awano* (US 200210163079) under 35 U.S.C. § 102.

On page 2 of the Advisory Action, the Examiner states in the "Response to Arguments" the following:

Regarding the rejection of claim 32, Applicant argues that the product-by-process limitation of "bringing the first nanoelement into operative contact with a suspension having clusters of catalyst material" results in "*different und superior* product." However, Applicant has not provided any evidence to support this assertion. Specifically, Applicant has not disclosed any element of the nanoelement arrangement **product**, as recited in claim 32, that is different from the nanoelement arrangement product of *Awano*.

The Examiner's comments have been noted and considered. Applicants may file a Declaration under 37 CFR 1.132, together with corroborating evidence for supporting the statements made in the last response that the product-by-process limitations recited in claim 32 results in a different (and superior) product.

In the meantime, claim 32 has been amended to even more clearly define the invention of the instant application. Support for the amendments may be found, for example, in paragraph 0019 of the specification.

Before discussing the applied prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 32 now calls for, inter alia:

a first nanoelement on which at least one predetermined region is covered in a targeted fashion with catalyst material *deposited after*

the first nanoelement has already been fully produced, the catalyst material is in a form of at least one cluster for catalyzing the growth of nanoelements, wherein the first nanoelement is covered with the catalyst material by bringing the first nanoelement into operative contact with a suspension having clusters of catalyst material, and removing the first nanoelement with at least one cluster attached thereto from the suspension; and

at least one second nanoelement grown on the catalyst material.

(Emphasis added.)

The Examiner states in the Office Action dated January 25, 2006, that:

Awano discloses forming a first nanoelement, covering the first nanoelement in a predetermined region with a catalyst material for catalyzing growth of nanoelements, and growing a second nanoelement on the catalyst material (Fig. 5A-6; para. 0088-0097). Awano does not disclose covering the first nanoelement with catalyst material by bringing the nanoelement into contact with a suspension.

Figs. 5A-5B, and paragraph 0088-0097 of *Awano* disclose the following:

... In the case illustrated in FIG. 5, carbon nanotubes are grown by plasma CVD and, accordingly, a *catalyst is located at the end of a grown nanotube throughout the course of growth*. In FIG. 5, however, the catalyst is not shown, for simplification. . .

[0089] As shown in FIG. 5A, carbon nanotubes 43a are grown vertically and upward from electrode pads 42 . . . , by a plasma CVD process. A metal catalyst needed for the growth of the nanotube is positioned in *advance* at a predetermined location *on* the *electrodepad 42*.

[0091] The carbon nanotube 43a is then opened at its grown end containing and covering the metal catalyst by oxygen plasma ashing, to thereby expose the catalyst metal, after which plasma CVD is continued to growth carbon nanotubes 43b while applying an electric field EX(t) in the horizontal direction, as shown in FIG. 5B . . . As a result, in the step of FIG. 5B, the carbon nanotubes 43b

are grown horizontally in *two opposed directions* starting from the end of the vertically grown nanotube 43a, at which the metal catalyst is exposed by the oxygen plasma ashing.

(Emphasis added.)

In *Awano* the catalyst is not deposited on the nanotube when the nanotube already has been grown, but deposited in advance on the electrode pad before the nanotube even comes in existence. In contrast, in the present invention the catalyst is deposited on the nanoelement after the nanoelement has already been fully produced using a suspension having clusters of catalyst material.

In *Awano* the catalyst is always on the *end* of the grown nanotube (or at the root in the case of thermal CVD). In contrast, in the present invention the catalyst is deposited in a targeted fashion in a predetermined region.

In *Awano* the carbon nanotube must be *opened* at its grown end containing and covering the metal catalyst by oxygen plasma ashing, in order to add a second nanotube. In contrast, in the present invention no such "opening" is necessary.

In *Awano* as illustrated in FIGS. 5A-5D, any second nanoelement must grow in *two opposed directions* starting from the end of the vertically grown first nanotube 43. In contrast, in the present invention is possible to grow a second nanoelement in only one direction.

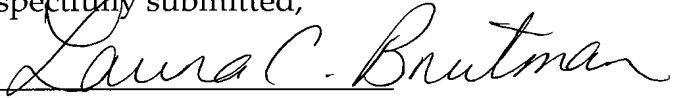
Considering the very different method of manufacture which inevitably will result in a different product, the invention as recited in claim 32 of the instant application is believed not to be anticipated by *Awano*. Claim 32 is, therefore, believed to be patentable and because claims 33-42 ultimately dependent on claim 32, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 32-42 (in addition to the claims, claims 22-31, held allowable) are solicited.

In view of the above, Applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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